1241 Bundy Boulevard, P.O. Box 5580, Winona, Minnesota USA 55987-5580
Phone: +1 (507) 454-5300, Fax: +1 (507) 452-4507, Internet: http://www.watlow.com

Congratulations on your purchase of a Watlow DIN-a-mite solid state power control. This product represents the state-of-the-art in solid state power control design. Please consult this user's manual when placing your new DIN-a-mite in service. It contains all the necessary information to mount and wire it into the application. This manual also contains all pertinent specifications and semiconductor fusing recommendations. Please refer to national and local electrical code safety guidelines whenever installing electrical equipment.

This DIN-a-mite product is capable of switching up to 100 amps single phase, at 600V~ at 30°C, depending on the model selected. It is electrically touch-safe and includes: standard back-panel mounting; on-board semiconductor fuses; and a current transformer option for external load current monitoring. A shorted SCR alarm option can notify the user of a shorted SCR condition. This is done via a circuit that monitors load current and input command signal simultaneously. If there is load current when there isn't a command signal, a secondary triac output will energize in about 3-4 seconds elapse time. This triac output can be wired to a remote alarm indicator.

The DIN-a-mite D mounting footprint matches that of an industry standard 100 amp mercury displacement relay. This DIN-a-mite is CE Approved, UL 508 listed, C-UL and VDE 0160.

User's Manual

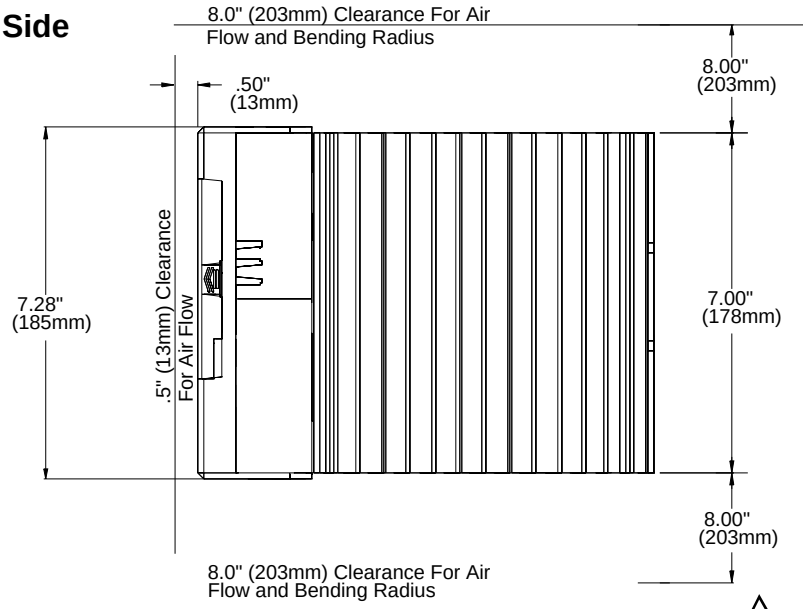
DIN-a-mite® Style D
Solid State Power Control

0600-0025-0013 Rev C
Supersedes
0600-0025-0013 Rev B
June, 2000, North American English

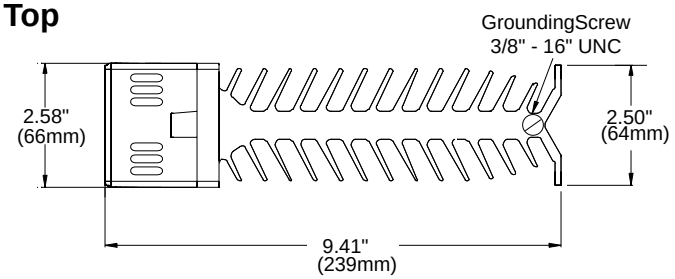
Made in the U.S.A.
Printed on Recycled Paper
10% Postconsumer Waste

Unit Dimensions

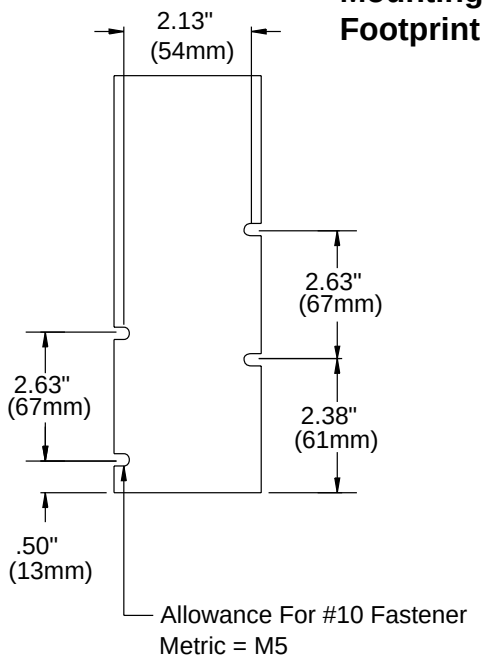
Side


8.0" (203mm) Clearance For Air Flow and Bending Radius
.50" (13mm)
8.00" (203mm)
7.28" (185mm)
.5" (13mm) Clearance For Air Flow
7.00" (178mm)
8.00" (203mm)
8.0" (203mm) Clearance For Air Flow and Bending Radius

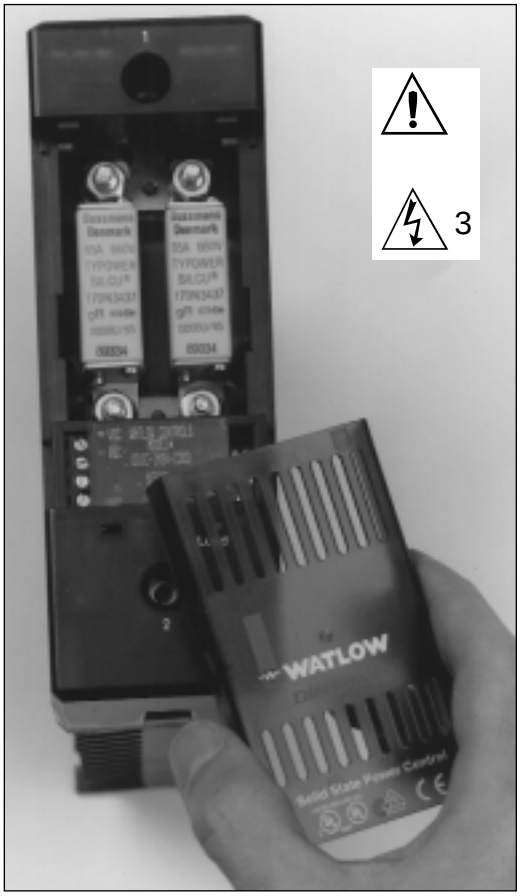
Top



Mounting Footprint



Fuse Replacement



After removing all power, use a 7/16-in. nut driver to remove fuse mounting nuts. Torque to 40 in. lbs.

1 WARNING: Wiring must conform to National Electric Code (NEC) safety standards, as well as locally applicable codes. Failure to do so could result in personal injury or death.

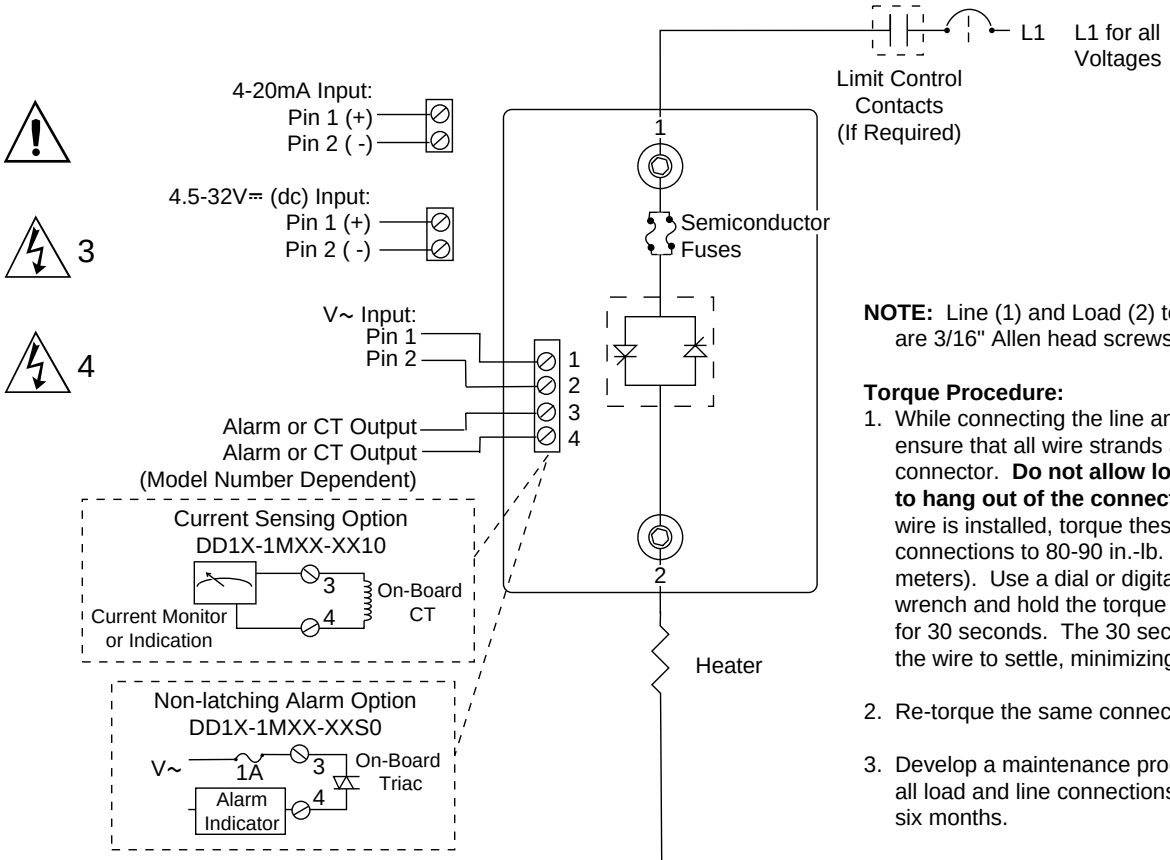
2 WARNING: Wiring examples show L2 in 240V~ or 480V~ configuration. In 120V~ applications, L2 is neutral and must not be fused or switched. Failure to follow this guideline could result in personal injury or death.

3 WARNING: Installation and service should be performed by qualified personnel only. Failure to follow this guideline could result in damage to equipment, and personal injury or death.

4 WARNING: All signal and alarm wires must be tied together beneath the cover. Failure to follow this guideline could result in personal injury or death.

5 WARNING: Hot surface, do not touch heat sink. Failure to follow this guideline could result in personal injury.

1Ø Output and Input Wiring



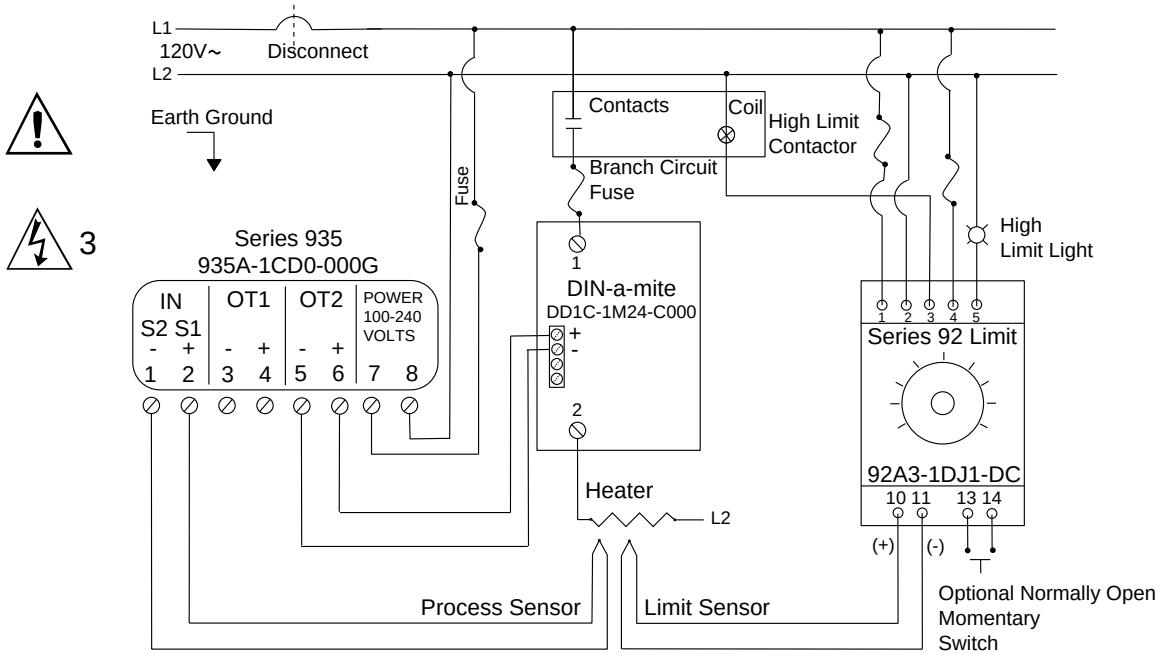
NOTE: Line (1) and Load (2) terminals are 3/16" Allen head screws.

Torque Procedure:

1. While connecting the line and load wires, ensure that all wire strands are inside the connector. **Do not allow loose wire strands to hang out of the connector.** Once the wire is installed, torque these same connections to 80-90 in.-lb. (9.0-10.1 Newton-meters). Use a dial or digital type torque wrench and hold the torque at 80-90 in.-lb. for 30 seconds. The 30 second hold allows the wire to settle, minimizing the wire cold flow.
2. Re-torque the same connections after 48 hours.
3. Develop a maintenance program to re-torque all load and line connections every three to six months.

The Watlow DIN-a-mite alarm option provides shorted output protection. If there is output current and no input command signal, the DIN-a-mite triggers an alarm. Typical indicators such as a latching limit, light, or audible alarm (customer-supplied) are triggered by the DIN-a-mite triac, rated for 0.3A ac at 25°C and 0.125A ac at 80°C.

System Wiring Example



Specifications (1804)

Control Mode-Zero Cross
- V~ input contactor
- V⎓ (dc) input contactor
- 4-20mA variable time base control

Operator Interface
- Command signal input
- Input signal indication LED
- Load current sensing output
- Shorted SCR detector output and indication LED

Input Command Signal
- 22, 120, 240V~ @ 13mA max
- 4.5 - 32 V⎓ (dc): max. current @ 4.5V⎓ (dc) is 8.5mA per leg plus 1.2mA LED current
- 4-20mA ⎓ (dc): 375 ohms input impedance, loop powered. Output control Type 'V' option only.

Output Voltage
- 22 to 50V~
- 120-240V~ units: 48V~ min. to 280V~ max.
- 277-600V~ units: 80V~ min. to 660V~ max.
- Off State Leakage: 1mA at 25°C max.

Amperage
- 1 phase, 100A output maximum at 30°C into a resistive load. See output rating curve.
- Max. surge current for 16.6mSec. 1,750 amp peak
- Max. I^2t for fusing: 12,750 A^2Sec.
- Holding current: 200mA min.
- Latching current: 400mA min.

Operating Environment
- Up to 80°C. See output rating curve for your application.
- Contactor V⎓ (dc) / V~ type input cycle time should be less than 3 seconds for longest DIN-a-mite service life.
- Insulation tested to 3,000 meters
- Units suitable for "Pollution degree 2"
- 0 to 90% RH, non-condensing
- 50/60 Hz independent

Agency Approvals
- UL508 listed and C-UL File #E73741
- CE with proper filter:
  89/336/EEC Electromagnetic Compatibility Directive
  EN 50081-2: 1994 Emissions; EN 50082-2: 1995 Immunity
  73/23/EEC Low Voltage Directive
  VDE 0160, License #91623

Terminals
- 3/16" Allen head compression - will accept #2-6 AWG (16-35mm^2)wire
- Torque to 80-90 in.-lb. (9.0-10.2 Newton-meters)

Mounting
- Standard back panel mounting; fits the same mounting pattern as a 100A 1Ø MDR
- Mounting holes offer clearance for #10 screw
- On-board semiconductor fusing, Bussmann P/N 170N3437

Current Sensing
- On-board current transformer, 0.1V~ output signal per amp into 100 ohms

Shorted Output Alarm Option
- Triac output 24/240V~ 300mA @ 25°C, 125mA @ 80°C
- Energizes on alarm
- Holding current 200µA max.
- Latching current 5mA typical.

Dimensions
- See page 2
- Weight: 6.5 lbs. (2.9 kg)

Specifications are subject to change without notice.

Note: User documentation may be available in French, German, Spanish, Italian, and Dutch, as well as English. Check Watlow's website (www.watlow.com/) for availability. Specify language at time of order.

Returns

1. Call Customer Service, +1 (507) 454-5300, or send a fax to +1 (507) 452-4507 for a Return Material Authorization (RMA) number before returning any item for repair.
2. Make sure the RMA number is on the outside of the carton, and on all paperwork returned. Ship on a freight prepaid basis.
3. A restocking charge of 20% of the net price is applied for all returned stock controls and accessories.
4. If the unit is unrepairable, it will be returned to you with a letter of explanation. Repair costs will not exceed 50% of the original cost.

Ordering Information (1811)

D D 1 _ - 1 M _ _ - _ _ _ 0

Part Number
Style "D"

Phase
1 = Single phase

Control Type
C = Zero-cross contactor
V = Zero-cross variable time base (4-20mA ⎓ [dc] only)

Amperage
1M = 100Amp

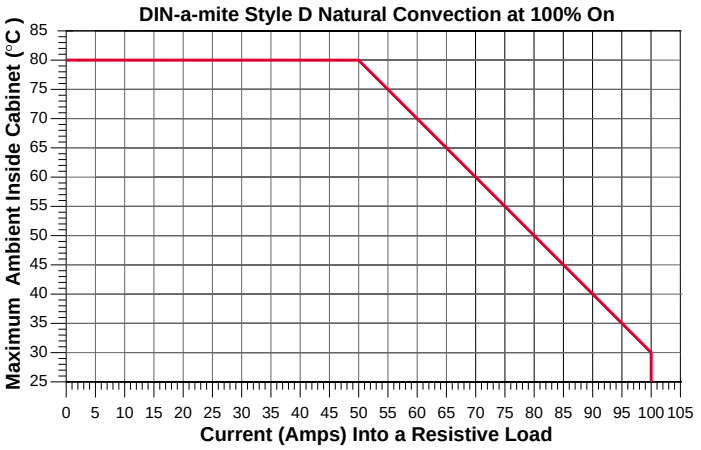
Output Voltage
02 = 22 to 50V~
24 = 120 to 240V~
60 = 277 to 600V~

Input Type
C0 = Zero-cross V⎓ (dc) contactor
F0 = Zero-cross 4-20mA input (variable time base only)
K1 = Zero-cross 24V~ contactor
K2 = Zero-cross 120V~ contactor
K3 = Zero-cross 240V~ contactor

Current Sensing or Alarm Option
0 = Neither Option
1 = Current Sensing (includes one current transformer)
S = Shorted SCR Detector (includes one current transformer)

Replacement Fuse
Watlow P/N: 0808-0096-0000
(Bussmann P/N: 170N3437)

Output Rating Curve



Warranty

The DIN-a-mite is warranted to be free of defects in material and workmanship for 36 months after delivery to the first purchaser for use, providing that the units have not been misapplied. Since Watlow has no control over their use, and sometimes misuse, we cannot guarantee against failure. Watlow's obligations hereunder, at Watlow's option, are limited to replacement, repair, or refund of purchase price, and parts which upon examination prove to be defective within the warranty period specified. This warranty does not apply to damage resulting from transportation, alteration, misuse, abuse or improper fusing.

TOTAL
CUSTOMER SATISFACTION

Technical Support

If you encounter a problem with your Watlow controller, verify that your wiring is correct for your specific model number. If the problem persists, an Application Engineer can discuss your application with you.

Before calling, please have the complete model number and user's manual available. You can get technical support by dialing +1 (507) 494-5656, 7:00 a.m. to 7:00 p.m. Central Standard Time.

The DIN-a-mite D User's Manual is copyrighted by Watlow Winona, Inc., © June 2000, with all rights reserved. (1803)